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ABSTRACT

Philosophical analysis was used to interpret a large-scale attitudinal survey that dealt with, among other factors, teachers' attitudes toward computers in the classroom. This analysis of the study considers the role of philosophical analysis in the context of empirical inquiry. To measure the impact of computers in the classroom on teachers in an urban and six adjacent school districts in a southwestern state, 10 items were attached to an attitudinal survey that was administered to 2,000 teachers in seven school districts. Overall, 1,060 teachers responded to the survey. Principal-component analysis was used to extract three factors from the 10 items. PCWKLOAD was the dependent variable examined in the study. As a standardized variable, it dealt with how the use of classroom computers adds to the teacher's workload. The responses of the teachers, who expressed great apprehension over the introduction of computers into their classrooms, were counterintuitive to the stated causal model of the researchers. Results of this nature may reveal underlying causal factors that were not understood or expected by the researcher before analysis of the data. The final task of the researcher in an empirical inquiry is to interpret and appraise the facts. This is a philosophical task, as opposed to the original empirical task. Empirical and philosophical inquiry, it is argued, play equally indispensable parts in research. Four tables present results from the study of teachers' attitudes. (SLD)

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REVISING THEORY WITH THE USE OF PHILOSOPHICAL ANALYSIS

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Educational Leadership and Cultural Studies

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A paper to be presented at the Theory Section of the 1989 Southwestern Social Science Association 68th Annual Meeting

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ABSTRACT

Philosophical analysis is used to interpret a large scale attitudinal survey that dealt with, among many other factors, teachers' attitudes towards computers in the classroom, which displayed responses that were counterintuitive to the researcher's stated causal model. Such results as were acquired by the researcher may reveal underlying causal factors that were not fathomed by the researcher prior to the analysis of data. The nature of these findings will be examined from the vantage of philosophically derived analytical techniques.

Survey research can inform and bring to the attention of those who apprise themselves of the findings of such research factors that would be otherwise unobtainable. These findings, however, are often left in a form not altogether distinct from that when they emanated from some mainframe. Social scientists often are left aghast at the policy derivations of their survey research findings. This paper modestly proposes to shed light on one such survey research effort, in an attempt to answer what the authors have called the "so what" question. That is, what do you as a researcher do with the implications inherent in your findings? This is in the aftermath of research efforts when the data has been analyzed and left for the machinations of powerful others to do with the data as these others see fit, according to their own political and/or organizational agendas (e.g., the findings of Coleman et al. in 1966, in regards to subsequently derived educational policies that resulted from that report).

Computers in the classroom have been dually heralded and prophesized against. Proponents like Papert (1984) and opponents like Apple (1987) have respectively praised and condemned the impact that computers will have on teachers and their students. Pundits of the benign nature of technology like Naisbitt and Aburdene hold that, "Today, we are re-inventing the world of work to shift from unions - that industrialized creation which demanded that everyone be treated the same - to individualized work contracts... computers make it possible" (1985:82). Others like Nasaw (1979) and Doherty (1981) see the appearance of computers in the classroom as little more than the continuation of poor administrative practices that see scarce funds allocated to technological anodynes that produce little measurable results. Scheffler posits that...

> To put the computer to educational use is in fact to transform it from one sort of instrument to another, to change its character as technology by throwing it into a new combination with human purpose. Its instrumental value for education is not a forgone fact, "out there," decreed by history (1986: 516)

Data Collection and Demographic Characteristics

To measure the impact of computers in the classroom on teachers in a large urban and six adjacent school districts in a southwestern state, where state mandated teacher testing and teacher assessments are occupational realities, ten items were attached to an attitudinal survey that was to be administered to 2000 of the teachers in the seven districts. Union stewards, direct mailouts, and placement of questionnaires in teacher's boxes were the ways in which teachers received their surveys. This survey was a follow up to a previous study initiated by the survey project's principal investigator (Dworkin, 1987). Overall an n=1060 responded. This established a 1 out of 7 ratio of responding teachers in the seven assessed districts. Questionnaires were distributed to 63 schools. A total of 51 schools were identified by respondents when they returned their questionnaires. Racially, 791 respondents were White, 172 respondents were Black, 73 respondents were Brown, and 4 of the respondents listed their race as other. Of the 12 schools that were not identified it is surmised that the 84 respondents who refused to identify their schools represented all or part of these 12. In terms of their perceptions as to their placement on the career ladder: 296 were at level one; 553 were at level two; 15 were at level three; 8 were at level four; and 142 did not know where they stood as to the career ladder placement.

Of those responding 229 were male and 819 were female. Their ages ranged form 21 to 68 with a mean age of 38.332. The mean teaching experience was 11.703 years of teaching. Seven of the respondents lacked a college degree, 223 had a college degree, 449 had a graduate or professional degree, 19 of the respondents had some type of doctorate. As far as school level goes, 509 responded that they were teaching at the elementary level, 236 reported that they were teaching at the junior or middle school level, 290 reported that their teaching assignment was at the senior high level, and 12 reported that they had no teaching assignment at the time the survey was conducted.

Statistical Measures

In all three, factors were extracted out of the ten items that dealt with classroom computers. Principal-Component Analysis was used to extract the three factors. All of the factors were orthogonal in relation to each other. PCWKLOAD is the dependent variable that will be examined in this paper. As a standardized variable, PCWKLOAD deals with how the use of classroom computers will add to an increase in the teacher's workload. Table One gives the ten items, the initial factor rotation matrix loadings, and the subsequent factor loadings.

Insert Table 1 about here

In all 30 independent variables were initially tested. Like the dependent measure, many of the independent variables were standardized so that they would have a mean of 0 and a S.D. of 1. The hierarchal stepwise regression technique of ordinary least squares was (OLS) employed to assess the relationships between the independent variables and the dependent variable. This method of measuring the effects of the dependent variable being sequentially regressed upon blocks of independent variables is a method that has been employed by other social researchers (Dworkin, 1987; Lorence, 1987; Rosenfeld, 1980).

The Model

PCWKLOAD consisted of the following regression of the criterion on the predictors:

$$YPW = a + bXtt + bXsc + bXr + bXs + bXja + e,$$

where YPW = the PCWKLOAD factor;

bXtt = teacher traits;

bXsc = school characteristics;

bXr = resources;

bXs = support;

bXja = job attitudes;

e = error.

Teacher traits (tt) consisted of the following variables BRNTEA (Brown teacher), EDUC (education), SEX, EXTERNAL (Locus of control), CAREERL (career ladder), and SKILLS (does the teacher feel that he/she has transferable skills). School characteristics (sc) consisted of URBSUB (urban/suburban) and Grade. Resources (r) was composed of PCCLASS (if computers are being used in the classroom at the teacher's school) and HOMEPC (if the teacher had a computer at home). A single predictor TEAORG (if the teacher belonged to a teacher organization) comprised the support (s) block. Job attitudes (ja) was composed of: OCCOMIT (a factor score of 12 Likert-type items that measured the commitment a teacher had to the occupation of teaching); STRESS (a factor score fo 15 items that dealt with occupationally linked stressors); BURNOUT (a factor score of 10 items that measured attitudes dealing with normlessness, powerlessness, isolation, and meaninglessness); and STRESICK (a factor score of 6 items that measure stress linked illnesses).

Results

During the initial regression in which all of the operationalized variables were analyzed, only 19 met the criteria for a subsequent run. Those variables that were deleted were pared because they were not significant, or their b values were less than twice of their standard errors. This initial analysis of the model showed a multiple R of .38892 and an R2 of .15125. The F value that this analysis produced was 9.75465. After removing all of the insignificant variables the model produced a multiple R of .39064 and an R2 of .15620. 12.53352 was the F value associated with this model. Table Two lists the variables, and the respective of r, b, s.e., and Beta for each variable.

Insert Table 2 about here

PCWKLOAD is a factor made up of 2 Likert-type items that measure apprehension on the part of the teacher as to how the computers in the classroom will, with the ministrations of their organizational superordinates, add to their workloads. Slightly more than 15 percent of

the total variance can be accounted for by the model. An inverse relationship with BRNTEA was shown by this measure. As Hispanic teachers represent a scarce resource in the districts sampled they perhaps do not feel threatened by a technological intrusion into their work setting. Apprehension over intrusion into their work setting might be heightened amongst those who have higher levels of education.

EXTERNALS might feel that the appearance of computers in the classroom are but another manifestation of an uncaring universe over which they have little control. As the state assessment instrument, that deals with their career ladder placement, has no assessors that deal with computer use, individuals may correctly perceive that this has as yet little bearing on their work at this juncture. As most the teachers are from a district where much lip service is given (as was the case in the previous variable, at the time the instrument was administered) to the positive impact that computers in the classroom will have on teachers, the organizational climate of the prevailing district may have obviated the impact of this variable. This can account for URBSUB being negative.

GRADE was also negative in the model. Lower grade teachers may feel that they are under such strict control by their administrators that an unfounded technological device may not be viewed as an apprehensor. However, the presence of a computer at the school where the teacher is employed could act as an apprehensor. Unlike PCCLASS, HOMEPC seemingly dampens apprehension over computers in regards to their being used to increase workloads of teachers.

As TEAORG showed a positive relationship with the dependent criterion, membership in a teacher's organization could certainly lead to members' apprehension over the device's capability to increase their workloads. Commitment to the occupation of teaching could certainly make a teacher apprehensive as measured by OCCOMIT. The negative relationship shown by the measure STRESS could be interpreted as teachers being so overwhelmed by the daily stressors in their lives that being apprehensive over an as of yet unreceived technological device as being beyond their ken. This may also account for the inverse finding in relation to BURNOUT and the criterion. A computer may be an abstraction, that will only be dealt with

when it is a reality. STRESICK also has an inverse relationship to the criterion. Paradoxically, however, it also shows a positive relationship with the criterion in its reported r. "This sign must agree with the sign of the regression coefficient (b)" (Bohrstedt & Knoke, 1982:249). This being the case this predictor will now be discarded.

A discussion of the model's common and unique variances will now ensue. As Fred N. Kerlinger and Elazar J. Pedhazur observe, "Commonality analysis is a method of analyzing the variance of a dependent variable into common and unique variances to help identify the relative influences of independent variables" (1973:298-9). This method allows for the predictor variables to be used in computing both the unique variance of the block, and the communal variances of all of the blocks. Unique variances are computed by subtracting the R2 of all of the blocks other than the one for which a unique variance is wanted from the R2 of the total blocks (Dworkin, 1987). In this manner a 5 block model, such as is being dealt with here, would see the unique contribution of block X1 being obtained by subtracting R2y2345 from R2y12345. Thus, obtaining the number of communal variances is a function of the number of blocks in the model. Commonality analysis acts so that the strongest predictor is prevented from having attributed to it shared variance.

According to Dworkin:

> The formula for determining the number needed is -k + 2k -1, where k is equal to the number of blocks in the regressions. Thus a 5-block model would have -5 + 2(5) -1 commonality equations, or a total of 26. Counting the unique variances, the total values which would appear in a commonality analysis table for a 5-block model would be 31... commonality is not intended to test hypotheses, but rather to correct for overly enthusiastic policy suggestions based upon analyses relying upon b's and betas (1987:186) [Note in the above formula ( ) indicates a superscript.]

Insert Table 3 about here

Overall PCWKLOAD had an explained variance level of 15.125 percent. However, only a proportionate squared semipartial correlation coefficient of .03431 of the OLS's R2 can be uniquely attributed to teacher traits. Attributable to confounded variance with the other blocks is .04360. Unique variance accounted for less than 2 percent with the next three blocks of variables.

School characteristics had an unique variance of .01422, and a common variance of .04081. The resources block had an unique variance of .01530 and a common variance of .0275. Support had an unique variance of .01197 and a common variance of .02437. Job attitudes, the last block, had an unique variance of .05211 and a common variance of .03390.

Commonality analysis can lend insight into the respective explanatory significance of the b's and the beta's. For instance with a b of -.241059 and a beta of -.062168 the BRNTEA predictor seems to add explanatory significance in its relation to the criterion. Yet, when this predictor is checked against the unique contribution of all the predictors in the teacher trait block its explanatory significance is called into doubt. BURNOUT was a predictor that had a high correspondence between its b and its beta. The b was -.090336, and the beta was -.090027. Considering that all the three other predictors in the job attitude block had a total unique variance of only .05211 certainly dampens any overly enthusiastic interpretation of the explanatory significance of the block.

Discussion

Researchers such as Apple (1986), Harris (1982), Bourdieu (1983), McLaren (1989) and Persell and Cookson (1987) could be expected to attribute much of what was measured by the OLS regression on the independent variables by the PCWKLOAD criterion to be indicative of a class based deskilling effect. While this may be the case, the commonality analysis on the criterion does not strongly support that viewpoint. Commonality analysis shows

that the, "...unique and common contributions are affected by the intercorrelations among the independent variables" (Kerlinger & Pedhazur, 1973: 303).

Granted there were economic, organizational, and historical factors that focused teachers attentions elsewhere than upon the advent of classroom computers in their districts. At the time that the data was collected: the area economy was extremely troubled; the urban district had to undergo the arrival of a new superintendent, as well as the state education agency threatening to downgrade the district's accreditation (this was to come about); also teachers in all of the seven districts were still reeling from the effects of state mandated teacher testing and the increase in paperwork that legislatively accompanied mandated teacher testing.

Additionally, these teachers in this study faced assessments from their principals and from outsiders. This last fact may have a lot to do with why the teachers in this study who showed such apprehension over the introduction of computers into their midst, in terms of the extracted factor PCWKLOAD, showed so little explained variance in relation to the predictors when the criterion was regressed upon them. Dworkin (1987) in his research into teacher burnout found that supportive principals mitigated the less than ideal conditions under which teachers labor. Structurally when the principal is thrust into if not an adversarial position by state edict, at the least an evaluative role that carries the sanctioning authority of the state, then the seeds of mistrust are sown by forces that neither principals nor teachers have control of. If teachers are to adopt computers in the classroom as technological aids, and not as administrative devices to intensify their work under the guise of professionalism (Apple, 1986) then the working conditions of teachers vis a vis their superordinates in the organization are going to have to be more egalitarian and less coercive. Until these conditions arrive, and in lieu of the arrival of classroom computers, teachers will find other more readily apparent stressors in their work environment to attract their attention and their concern.

Conclusion

The Philosophical Task In Empirical Inquiry

Theorizing from observable data is the ideal end state of research. Too often the researcher is beset with the technical aspects of interpreting the b's, beta's, alpha levels, coefficients of determination, and the other by-products associated with statistical analysis. These measures and their statistical interpretation often become the end of research efforts, instead of the means by which fruitful philosophical analysis could proceed.

Political scientist Kenneth R. Hoover observed:

> A noteworthy scientist once commented that 'science is observation,' which he meant to suggest that getting all wound up in the details of experimental and control groups, statistics, and the rest can obscure the purpose of scientific inquiry: using your head to understand what is going on . . . the mind is a far more subtle instrument than any set of procedures for investigation. Where science as method ends., scientists as people take over (1984:69).

And it is as people who have the capability of philosophical inquiry that scientists of any stripe have the moral necessity of inferring from their data more that what can be strictly gleaned by looking at the statistical tables. It is here that philosophers speak of "going beyond the information given". Thus, the authors have set for themselves the task of showing traits of parellelism, and possibly even convergence, between lines of empirical investigation like that described above and philosophical analysis.

A question as to the attitudes of teachers concerning the use of technological devices in their classrooms is, by common consent, not a philosophical but an empirical question. And, contrariwise, a question as to the relation of philosophy to empirical inquiry, or as to the meaning and significance to educational policy of the aforementioned attitudes of teachers toward the intrusion of technology in the classroom, would commonly be classed as philosophical questions and not as questions belonging to any of the empirical sciences. It thus might be asked, "How is the subject matter of any given systematic inquiry defined"? It is not by means of a

truly scientific method that we distinguish the empirical sciences from philosophy. The hypothesis we propose takes for granted to begin with that philosophy is a knowledge-seeking and knowledge-yielding enterprise. In this respect, therefore, it holds that philosophy resembles the empirical sciences, and itself is, or seeks to be, a science. This means that its utterances, like theirs, claim to be in contrast with those of poets, priests, and prophets; that its basic function is not to impart feelings or to edify or to exhort, but to enlighten; that the task of its professors is to teach, not to preach, that the philosopher, like the scientist, is not a pastor but an investigator.

The knowledge philosophy seeks will, it is true, having bearing on our ways of conducting our thoughts, our feelings, and our actions, for that knowledge is in part of the kind itself called wisdom and in part of the kind that furnishes the basis for a wisdom more secure that is otherwise to be had. But the philosopher's wisdom, so far as he has such knowledge, is not to be thought of as somehow innate in his particular soul or as vouchsafed privately to him by special divine revelation. Rather, it derives from scientific study by him of the facts that are the subject matter distinctive of philosophy; and this search for knowledge is neither less nor more nor otherwise dependent on contact with concrete social or moral problems than the search for attitudes of teachers on the intrusion of computers in the classroom is dependent on contact with concrete educational problems.

The knowledge philosophy seeks, moreover, is not knowledge in a different or less rigorous sense of the term than the knowledge sought by the other sciences. It too is knowledge as contrasted with guesses, articles of faith, snap judgments, vague or unsupported opinions, prejudices, and wish-born beliefs. From this it follows that the method of philosophy must be no less scientific than that of any other knowledge seeking enterprise, for "scientific" means nothing more nor less than knowledge-yielding.

But since employment of a method truly scientific cannot be what distinguishes empirical sciences from philosophy -- while, as the examples mentioned earlier shows, we do distinguish between questions belonging to them and questions belonging to philosophy -- the

basis of distinction can only consist in a difference of subject matter. What then is the subject matter distinctive of philosophy? What contribution would an understanding of such subject matter make to the empirical study under consideration?

To answer this difficult question it will be useful as a first step to ask what general form an answer to a question of this kind necessarily takes in any other case -- for instance, in the easier case of the empirical study cited earlier. It certainly would only add to the confusion if we simply attempted to reduce inquiry of this sort to study of the natural or material world. For it only raises the even more difficult question of how to differentiate "nature" from whatever we contrast it with. And it is not easy to find a definition of nature that will apply equally to things seemingly as heterogeneous as fear, light, heat, heredity, subatomic particles, learning, etc., all of which belong to the realm which the empirical sciences investigate. A solution to the difficulty becomes discernible only when it occurs to us to make a certain highly important distinction -- namely, that between what we may call the primitive facts of a science and its derivative facts.

We will define the primitive facts of a science as those which, for it, are beyond question, i.e. the "givens". They are, on the one hand, the facts about which the science asks its very first, most elementary questions, and on the other hand, the facts about which the science ultimately appeals in testing the validity of its hypothesis. The primitive facts of a science are thus facts of the kind with which its inquiries originate and also terminate. An example of a fact which was primitive for the study cited in this paper, and which originated the inquiry, would be the ever increasing existence of technological innovations in educational institutions. That such innovations such as personal computers exist in schools is perceptually obvious in many places and is therefore not questioned, but about it some questions occur to the inquirer. Thus, the inquirer would regard primitive facts as those facts established beyond question by ordinary perceptual observation; but many questions about them would arise in his mind.

The derivative facts of a given science on the other hand, will be defined as those facts discovered as a result of the attempt to answer, about its primitive facts, the kind of questions

that distinguish an enterprise of the sort called empirical enterprises from enterprises of other sorts. These questions concern relations of the given facts to one another, and, more specifically, relations capable of providing a basis for inferences from given facts to other facts in the field of the given inquiry. For example, what is the relationship between fear of technological innovation and such factors as school characteristics, resources, support, job attitude, teacher traits, etc... Therefore, questions distinctive of a science may be described as those involving the establishment of primitive facts plus any facts analytically or synthetically derivative from them. The primitive facts of the empirical domain are those ascertainable by ordinary external perception; that is, any facts susceptible of being perceptually public in the sense that ordinary perceptual observation is what establishes them as beyond question for all the practitioners of that form of science. In the light of these considerations, we submit that nature - which is the subject matter of the empirical sciences - consists of such facts as are susceptible of being perceptually public, plus such facts as are analytically or synthetically implicit in these.

What, then, is the subject matter distinctive of philosophy? Or, more specifically, what are the primitive facts distinctive of philosophy? We submit that the facts primitive for philosophy all consist of appraisals or valuation. But when it is asserted both that the facts primitive for a science are those it takes as subjects of its questions but as not themselves in question, it is not meant that the justice or warrantedness of appraisals is in general beyond question for philosophy. What is for it beyond question is their occurrence, i.e., that certain appraisals are made of certain entities by certain persons.

Appraisals are of many kinds and so are the things appraised. The latter include not only objects, events, or situations external to man, but also man's own experiences, and his activities and operations, whether physical, psychical, or emotional. Among kinds of appraisals, some of the more familiar are those we formulate (when we formulate them at all) by means of such adjectives as "good" and "bad", "right" and "wrong", "moral and immoral",

"beautiful" and "ugly", "sublime" and "ridiculous", "sound" and "erroneous", "veridical" and "illusory", "valid" and "fallacious", "real" and "unreal", etc.

To appraise something is thus to judge its merit or worth -- positive or negative, comparative or absolute. The positive or negative judgment may be dominantly emotional (e.g., liking or disliking) or dominantly epistemic (e.g., a believing or disbelieving) or dominantly volitional (e.g., an effort to cause or to prevent). But in all cases the appraising consists of some form of favoring or disfavoring response to the entitity appraised.

Contemporary analytic philosophy has developed the reputation in recent years of unduly concerning itself with self-contained technical problems. Yet the technical problems with which philosophers are so largely occupied are, as in any other science, generated solely by the persistent attempt to analyze and synthesize in a thoroughgoing manner the humble primitive facts. They are marked off as technical problems of philosophy rather than of some other science solely by the fact that the primitives out of which that persistent attempt generates them are the philosophical primitives, viz., appraisals such as described.

Therefore, the final task set before the researcher in the aforementioned empirically study is to interpret and appraise the facts before him. It is through such appraisal that policies are established and applied. This too, we argue, is a task for the researcher. But a task of a different kind. A philosophical task as opposed to the initial empirical one. What specifically is the nature of such a task in appraising the relationship of PC WKLOAD to teacher traits, school characteristics, resources, etc.

The task is for the researcher to inquire into the conceivability of the appraisals offered by inquiring into the logic of the concepts (ideas) he applies to these appraisals. That is, he attempts to understand and explain the logical connections that bind them together.

The task is to offer an analysis of the philosophical appraisal "goodness" as it relates to resources, support, job attitude, school characteristics, teacher traits etc... And finally to synthesize or show the relationship existing between such appraisal and teacher attitudes

toward technological innovations. It is armed with data derived both from carrying out empirical and philosophical task that sound educational policies are implemented.

In conclusion, it was not our attention, in these observations, to challenge the claims of empirical inquiry to an origin and existence all its own, independent of philosophical reasoning. Our purpose was rather to suggest an analogy in accordance with which this independence may be justified on the basis of a definite relation between the two types of inquiry. Certain traits of parellelism and even congruence, we argued, would necessarily disclose themselves as between lines of investigation so closely akin. And each would have something to contribute to the other. In short, the bald opposition of empirical inquiry and philosophical inquiry may be false by the terms themselves are right enough. But however right the terms may be as independent entities, empirical and philosophical inquiry, we have argued, play parts equally indispensable. To force "philosophical reasoning" into the meaning of "empirical experience" or "empirical experience" into the meaning of "philosophical reasoning" is a futile procedure whose only fruit would be to save the mere terms "empirical" or "philosophical" for use as epistemological battle cries. But a careful discernment of the interconnecting roles of perceptual experience and rational appraisals in inquiry eliminates the cause for battle itself and therefore also the need for battle cries.

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TABLE 1

Factor Analyses for Scale Construction

THE FOLLOWING ARE THE 10 ITEMS THAT COMPRISED THE PERSONAL COMPUTER LIKERT SCALE

1. Computers are a valuable aid to teachers.
2. Administrators use computers to add to teacher's workloads.
3. Overall, students are more knowledgeable about computers than are most teachers.
4. Computers in the classroom will increase teacher's workloads.
5. Computers in the classroom will decrease teacher's workloads.
6. Computer are just another educational fad.
7. Classroom computers will increase the role of the teacher as instructional leader.
8. Classroom use of computers will increase the amount of student learning.
9. I think that I would enjoy using a computer in my classroom as a teaching aid.
10. I am at least a little afraid of using a computer.

CODING

1 = Strongly Agree
2 = Agree
3 = Neutral
4 = Disagree
5 = Strongly Disagree

INITIAL FACTOR LOADINGS

	FACTOR 2
PC1	-.106
PC2	-.393
PC3	.796
PC4	-.179
PC5	.070
PC6	-.147
PC7	-.033
PC8	.013
PC9	-.156
PC10	.531

FACTOR 2-PCWKLOAD	FACTOR 2
ITEM	
PC2	.832
PC4	.832
VARIANCE EXPLAINED	69.2
EIGENVALUE	1.38

MINIMUM SIGNIFICANT FACTOR LOADINGS = 0.350

TABLE 2

Revised Model of PCWKLOAD

Variable	r	b	s.e.	Beta	Sig t
Brntea	-.039012	-.241059	.114524	-.062168	.0335
Educ	.013793	.088524	.034383	.077750	.0102
Sex	-.133171	-.228557	.07290	-.095643	.0018
External	-.121497	-.023239	.006842	-.102597	.0007
CareerL	-.119107	-.235881	.059033	-.119107	.0001
Skills	-.0129917	9.14273	.047451	5.547	.9846
Urbsub	-.123196`	-.178620	.072159	-.075201	.0135
Pcclass	.062390	.180281	.061173	.085957	.0033
Homepc	-.091552	-.204533	.065671	-.091561	.0019
Teaorg	.116716	.227779	.059324	.111348	.0001
Occomit	.123523	.075056	.032790	.071982	.0223
Stress	-.215228	-.185999	.034722	-.177648	.0000
Burnout	-.197043	-.090336	.035910	-.090027	.0120
Stresick	.040361	-.098948	.031829	-.100294	.0019
	Constant = .423105	R = .39064	R^2 = .15260	F = 12.53352	

TABLE THREE

Commonality Analysis of PCWKLOAD

Squared multiple correlations for pcwkload

Y = pcwkload; 1 = teacher traits; 2 = school characteristics; 3 = resources;

4 = support; 5 = job attitudes

U1 = .03431
U2 = .01422
U3 = .01530
U4 = .01197
U5 = .05211

R.y1 = .05930	R.y12 = .07679	R.y123 = .09008	Ry.1234 = .10049
R.y2 = .02816	R.y13 = .06871	R.y124 = .08771	Ry.12345 = .15260
R.y3 = .01218	R.y14 = .06917	R.y125 = .12456	Ry.1245 = .14063
R.y4 = .01362	R.y15 = .11083	R.y134 = .08024	Ry.1345 = .13730
R.y5 = .06790	R.y23 = .04310	R.y135 = .12613	Ry.2345 = .13838
	R.y24 = .04009	Ry.145 = .12391	Ry.12345 = .11829
	R.y25 = .08798	Ry.234 = .05443	Ry.12345 = .15260
	R.y34 = .02510	Ry.235 = .10577	
	R.y35 = .08383	Ry.245 = .10132	
	R.y45 = .08180	Ry.345 = .09695	

Ry.1234 = .10049
Ry.12345 = .15260
Ry.1235 = .14063
Ry.1245 = .13730
Ry.2345 = .13838
Ry.2345 = .11829
Ry.12345 = .15260

TABLE 4

COMMONALITY PARTITIONING OF VARIANCE

Source of Variance	$R^{2}\text{-}1$ (teacher traits)	$R^{2}\text{-}2$ (school characteristics)	$R^{2}\text{-}3$ (resources)	$R^{2}\text{-}4$ (support)	$R^{2}\text{-}5$ (Job attitudes)
U1	.03431				
U2		.01422			
U3			.01530		
U4				.01197	
U5					.05211
C12	.00712	.00712			
C13	.00167		.00167		
C14	.00055			.00055	
C15	.01175				.01175
C23		.00303	.00303		
C24		.00028		.00028	
C25		.00603			.00603
C34			.00077	.00077	
C35			.00117		.00117
C45				-.00156	-.00156
C123	-.00100	-.00100	-.00100		
C124	.00032	.00032		.00032	
C125	.00196	.00196			.00196
C134	.00011		.00011	.00011	
C135	-.00011		-.00011		-.00011
C145	.00037			.00037	-.00037
C234		.00006	.00006	.00006	
C235		-.00088	-.00088		-.00088
C245		.00084		.00084	.00084
C345			-.00026	-.00026	-.00026
C1234	.00850	.00850	.00850	.00850	
C1235	-.00016	-.00016	-.00016		-.00016
C1245	.00015	.00015		.00015	.00015
C1345	.00004		.00004	.00004	.00004
C2345		-.00223	-.00223	-.00223	-.00223
C12345	.01679	.01679	.01679	.01679	.01679
Total R^{2}	-----	-----	-----	-----	-----
	.07791	.05503	.04280	.03670	.08601
Unique Variance	.03431	.01422	.01530	.01197	.05211
Common Variance	.04360	.04081	.0275	.02473	.03390